NOTES AND NEWS

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NOTES AND NEWS

EXCAVATIONS

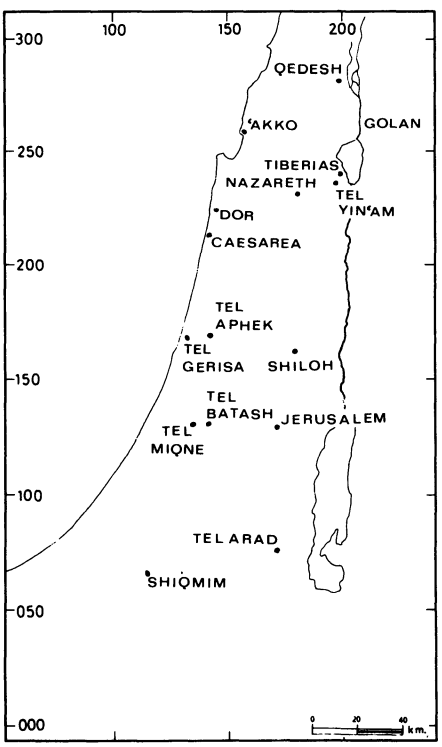
Qedesh (Upper Galilee), Roman Temple

The site of Qedesh is approx. 15 km. north of Safed and approx. 2 km. north-west of Moshav Ramot-Naftali (map ref. 2002 2798). One can distinguish a mound rising towards the western edge of the valley of the same name and a low hill about 200 m. east of it. The city flourished in the second-third centuries C.E., according to epigraphic material and archaeological remains. Later historical sources bear witness to continued settlement at the site in the Byzantine period. Eusebius of Caesarea notes in his *Onomasticon* that Qedesh is 20 miles from Tyre. Muqaddasi, the Arab geographer of the tenth century, also mentions the city.

On the hill to the east of the mound, the remnants of an architectural complex are very well preserved. To the west of the complex, the remains of mausolea and decorated sarcophagi may be seen, and on the northern and north-western slopes of the hill tombs are cut in the rock. In 1976 and 1977 a comprehensive survey with measurements was carried out on the site, in which the architect D. Chen also participated, on behalf of and with the assistance of the Department of Classical Studies of Tel Aviv University (our thanks are due to Prof. S. Perlman, Head of the Department of Classical Studies). The first season of excavations took place on 2–26 August 1981, under the direction of the authors on behalf of the Institute of Archaeology of Tel Aviv University, and with the participation of D. Michaeli and M. Aviam of the Society for the Protection of Nature (Mt. Meiron field school). The measurements were made by architect G. Solar, who also prepared the plans.

The architectural complex consists of a *temenos* whose size is 80 × 55 m. with a monumental temple in its centre. The temple is rectangular (inner measurements: 20 × 17.6 m.) and is composed of a portico and a *cella* (Fig. 1). The nature of the roofing of the *cella* still poses a problem. Only the eastern façade of the temple remained (Pl. 14:C); 14 courses were preserved (approx. 11 m.). This façade includes a large central opening and two side openings. The temple was built dry of well-dressed ashlars. The massive threshold of the central opening was found *in situ*. The three openings of the temple are well constructed and decorated. From the remains, it is possible to reconstruct the façade of the portico as hexastyle, comprising two groups of three columns each. Various architectural elements, such as parts of an entablature, bases and capitals, were also found.

The approach to the threshold of the central entrance, which was one m. higher than the floor of the portico, was probably by a ramp, of which remains were discovered near the stylobate. A row of sockets in the threshold indicates that the central entrance was blocked by a chancel-screen which prevented worshippers from entering it, though they could see the statue or relief of the god.



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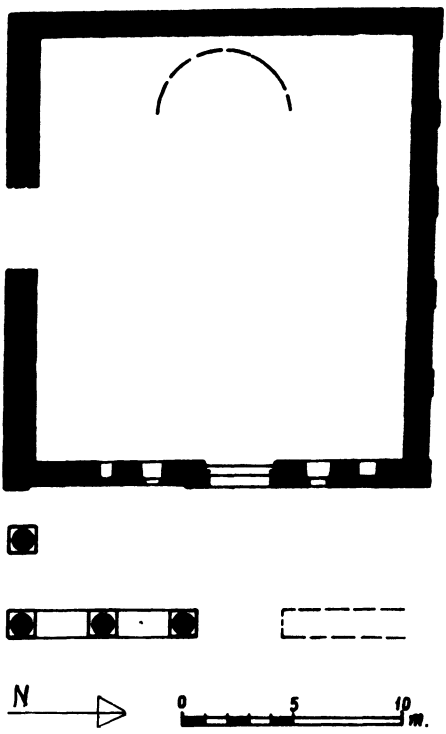

Fig. 1. Qedesh, plan of temple.

Attached to the western wall of the *cella*, opposite the central entrance, was discovered half of an apse which was apparently intended to house the statue or relief of the deity to whom the temple was dedicated (like the *adyton* in Syrian and Lebanese temples). An examination of the apse revealed that it was built at a later stage than the temple. On the outside of the north-western corner of the *cella*, running for about 5 m., a delicate profile of the lowest course of the wall was found with pseudo-pilasters above it. In the south-western corner a similar profile was visible before excavation.

To the north and south of the two side openings of the *cella* are two *kraters* carved in the stone, from which narrow channels flow towards the interior of the building. These channels were almost certainly used for libation to the god. It should be pointed out that these libation channels are, to the best of our knowledge, unique in the architecture of temples in the Roman world. Above the southern *krater* is an apsidal niche in which is carved a sunken relief of a human figure. The figure is dressed in a *toga* and in its right hand holds a pear-shaped vessel with basket-like handles, while its left hand holds a spear.

Judging from the exceptionally rich remains found on the surface and in the excavations, we can say that we have here a Corinthian temple. The many parts of entablature, Corinthian capitals, bases and pedestals indicate that this temple belonged to the series of 'baroque' structures in the eastern Roman empire. According to the characteristics of the finely decorated architectural items and their comparison with similar items on sites in Syria and Phoenicia, it is possible to attribute most of them to the second half of the second century C.E.

Two Greek inscriptions previously discovered are dedicated to the 'holy god' and the 'holy god of the sky' respectively, referring to Baal-Shamin, one of the main gods of the inhabitants of the region in the Roman period. The two eagles which appear, one on the soffit of the lintel of the central opening and the other in the centre of the lintel of the northern opening, support the identification of the deity to which the temple is dedicated as Baal-Shamin.

The dated inscriptions discovered in the past and during the excavations and the architectural decoration present a basis on which the complex may be dated. Three Greek inscriptions, from 117/8, 190 and 214/5 C.E., bear witness to the functioning of the temple in the second and third centuries C.E. It is possible that the construction of the temple complex was begun at the beginning of the second century C.E. and continued over a long period. At this stage it is difficult to determine when the temple ceased to exist, but the complex was possibly destroyed in an earthquake, perhaps that which struck the area in the year 363 C.E.

(Communicated by A. Ovadiah, M. Fisher and I. Roll)

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*Golan Survey, 1981–1982**

A fourth and fifth season of survey and cataloguing of Roman and Byzantine sites on the Golan Heights were conducted by the Golan Byzantine Expedition in September 1981 and October 1982. The project had the support of the Basic Research Foundation of the Israel Academy of Sciences and Humanities, the Memorial Foundation for Jewish Culture of New York, the Wolfson Foundation of London, the Palestine Exploration Fund of London and the T.W. Green Fund of the University of Oxford. The Department of Antiquities and Museums and the Archaeological Survey of Israel provided a permit and supplied equipment. The project is directed by Claudine Dauphin; Jeremy Schonfield is responsible for the analysis of structures.

Farj. The structural analysis of Farj in the eastern Golan (map ref. 2284 2627) was completed. Corrections were made to the site plan (scale 1:500) drawn by architect B. Wool and to the plans, elevations and sections of three notable ancient buildings (scale 1:100 and 1:50). A dossier of 70 pieces of architectural sculpture (scale 1:10) was compiled by B. Wool and surveyor S. Gibson. Lapidary inscriptions in Hebrew, Aramaic, Greek and Early Arabic were recorded by drawing, photography and the squeeze technique. A photographic record of the site was prepared. The settlement of Farj comprises a wide range of large private courtyards, with some buildings complete almost to their roofs, grouped in three distinct quarters around a volcanic plug, a wadi, two pools and three wells. The road system along which the settlement lies seems to dictate a north-south direction. By meticulously distinguishing masonry types, defining ground plans and observing the stratigraphy of each building, it has been possible to trace the origins of the site to a core of at least two elaborately laid-out *villae* on the northern and southern slopes of the volcanic plug, that attracted a crescent of at least twelve ancient multiple-home housing units as well as smaller and poorer units to the east of the wadi. The carvings and inscriptions of Farj, some of them *in situ*, provide a guide to the chronology and the ethnic composition of the population. There appears to have been a variety of populations, discernable in the juxtaposition of incised *menorot, lulavim* (or Trees of Life), a *shofar*, Hebrew and Aramaic inscriptions, together with crosses, fish symbols and Greek inscriptions.

Khushniyye (map ref. 2261 2675) in the eastern Golan lies on a Roman road which branches east from the *via maris*. It occupies the summit and slopes of a volcanic plug; at the foot of its northern slope runs a wadi. The southern slope is terraced. Water is supplied by ponds north and south-east of the site and by cisterns in the upper town. The site plan (scale 1:1650), drawn by S. Gibson from an aerial photograph, was checked. Most structures on the summit, which form a square urban plan surrounded by a town wall, were found to be of recent date. The south-eastern quarter contains traces of walls that appear to be ancient, though not of fine Byzantine type. A rough basalt block (0.39 × 0.24 m.) possibly bearing an incised *menorah* was found reused in a retaining wall. Two basalt mill cones — one apparently unfinished — and a loom weight were found. There were few Byzantine sherds compared to the abundance of Second Temple storage-jars, cooking pots and amphorae, and Mamlūk glazed wares. The southern slope contains possibly Roman structures related to the earliest terrace systems. Houses to the east appear to be medieval though perhaps with earlier foundations. Chalcolithic sherds were collected on the western slope. A ruin to the south-east of the hill is a small cluster of houses with associated Roman and medieval pottery.

Er-Ramthāniyye. The site plan (scale 1:1650) of er-Ramthāniyye (map ref. 2256 2696) in the eastern Golan, drawn by S. Gibson from an aerial photograph, was preliminarily checked, and some additions made. The final plan will be enlarged to a scale of 1:500 and used for the analysis of structures. The focal point of the settlement is a large hall-type structure with ancient foundations on the summit of the volcanic plug, to which a number of streets lead. It was partly reconstructed in the nineteenth century. It contains 23 reused pieces of architectural

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sculpture in high relief on basalt (including two with Greek inscriptions) depicting palm trees, crosses, vine scrolls and geometric motifs (Pl. 15:A). These were drawn (scale 1:10) by B. Wool and S. Gibson and photographed. Three previously unrecorded incised Greek inscriptions were discovered, including an eleven-line text on an ashlar block. These were recorded by drawing, photography and squeeze.

Mazra'at Quneitrah (map ref. 2229 2555). Two decorated fragments forming the basalt lintel of a monumental door reused in a modern house were drawn (scale 1:10) by S. Gibson and photographed.

(Communicated by Claudine Dauphin)

*'Akko, 1982**

The eighth season of excavations took place between 1 July and 25 August under the direction of M. Dothan, who was in charge of Areas AB and B. This year the excavation was again co-sponsored, on behalf of the Deutsche Forschungsgemeinschaft, by the University of Marburg, West Germany, under D. Conrad who was in charge of Area K. The area supervisors were Michal Artzy (Area H and associate director), A. Raban (Area F), A. Ritterspach (Area A), M. Pepworth (Area B1), F. Grussman and A. Wittstock (Area K). Additional supervision was by J. Quartermaine, W. Quintens and Maria Jacobsen. Anne Killebrew and Katharina Conrad were registrars; G. Barton, M. Card, N. Silberman and Regina Kaffen Herzfeld were surveyors; F. Schneider, M. Rosenblum and D. Scheuer were photographers; P. Peled was restorer. Financial and other support for the excavation came from the Haifa Friends of the 'Akko Project, the Scheuer Foundation, the P.E.F. Israel Endowment Funds, Inc., New York, and the Israel Exploration Society.

During the season there were on an average 80 volunteers from the University of Copenhagen, Elizabethtown College, Pennsylvania, and Evergreen University, Olympia, Washington and several German universities; volunteers also came from Great Britain, Haifa University Departments of Maritime Civilizations and Eretz-Israel Studies, and the Oranim Teachers' Seminary.

Areas AB and B. A great deal of progress was achieved in the effort to elucidate the complicated history of 'Akko's massive fortification system. In searching for the method used in the construction of the rampart on which the citadel, 'Building A', was erected, we came upon formidable remains, probably of the earliest defence structure on the site. A massive wall of large boulders about 3.5 m. thick was erected on the highest point of the mound (Fig. 1). Against this was built a sloping rampart covered with white plaster. It is still unknown whether this fortification system encompassed the entire city or only the acropolis. During the second stage a mud-brick wall about 2.5 m. wide and preserved up to 4 m. high was built on the top of the remains of the earliest wall. The outer (northern) face of this wall, in which we have found up to now two offsets, has been traced for 25 m. and was covered with thick white plaster, indicating that it was originally exposed. Attached to its northern face was a stairway running east-west consisting of 19 stone steps, the lowest of which was built on top of the rampart, which had been raised in the second stage. On the inner face of the wall an MB IIB level has been reached, with an MB IIB grave in its latest stage. It seems that at least the first stage of this fortification system belongs to the MB IIA (see Fig. 1). In the later stage this fortification, including the stairway, was covered from the outside, and to the north of it the citadel ('Building A') was erected in the late MB IIA or early MB IIB. It seems that at the end of the MB IIB the citadel was completely covered by another layer of *terre pisée*. In this rampart LB I and LB II graves and silos were constructed.

Area H. This season work was concentrated mostly on the eastern rampart leading from the top of the mound to the west. In this area it seems to be about 30 m. wide. Below medieval, probably Crusader, remains were traces of Hellenistic structures. It seems that some of these walls belonged to a cultic installation; a Hellenistic cult vessel well known from Cyprus was found associated with them. From the

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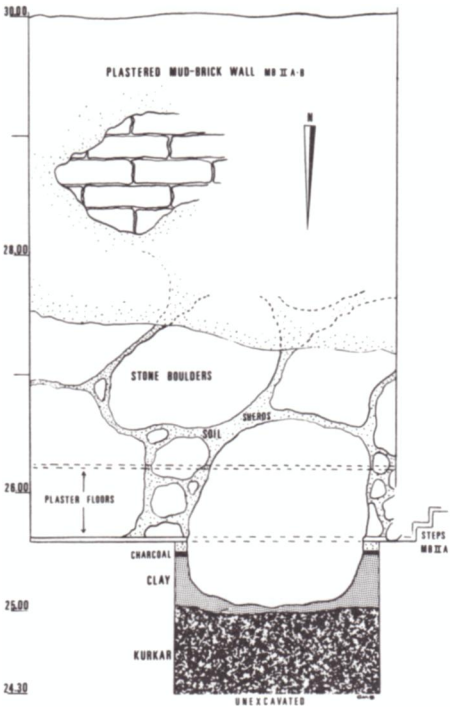

Fig. 1. 'Akko, Area AB, section facing south showing MB IIA stone wall and MB IIA–B mud-brick wall.

Persian period, part of a stone lintel(?) with a fragmentary Phoenician inscription incised in monumental script was discovered. As in the previous seasons, it was found that parts of the rampart were used for burials in different periods. This season a unique vaulted tomb built into the north-western slope of the rampart was uncovered. According to the pottery it belongs to the MB IIC–LB I.

Area K. During this season work in the area continued on a somewhat smaller scale. The stratification consists of the following levels: two levels of Hellenistic occupation, the Persian level, mainly represented by a series of deep pits which seriously disturbed the earlier levels and by some scanty architectural remains, mostly small walls using earlier walls as foundations and a level which probably belongs to the Babylonian period. Below this are two Iron Age levels, the upper of the eighth–seventh centuries B.C.E. and the lower of the eleventh–tenth centuries. The accumulation of debris is here about one m. high and testifies to a massive destruction. Below these levels a level of the last stage of the LB and the beginning of the Iron Age was reached. In the western part of the area several building units could be detected; the main feature here is a cistern, about 2.6 m. deep and 1.75 m. wide. Its interior plaster is very well preserved. This cistern, which went out of use during the early Hellenistic period, was built during the Babylonian or Persian period. In the eastern part of the area several walls were rebuilt and reused. One of those walls continued from the LB until the Persian period. The large amount of iron slag found in the Persian period pits, a series of ovens in the Iron Age levels and remains of pottery kilns in the small area of the LB level reached so far show that during each period this area had a predominantly industrial character. Beside the local and Phoenician pottery types, imports from Cyprus and the Aegean were found. Of special interest among the small finds are a series of animal horse figurine heads and three ostraca, one of them with an Aramaic inscription.

(Communicated by M. Dothan and D. Conrad)

Tiberias

A trial excavation was conducted at Tiberias in March and April 1982, on behalf of the Department of Land of Israel Studies of Bar-Ilan University, by S. Dar and D. Adan-Bayewitz. Also participating were Y. Tefer (surveyor) and M. Nahari and M. Angverston (area supervisors). The limits of the excavation site were the city-wall of Dahir al-Umar to the north, Galilee Street to the west, the Sea of Galilee and a Greek Orthodox monastery to the east, and the Galei Kinneret Hotel to the south. The site, which slopes toward the Sea of Galilee with a level differential of 3–4 m., is owned by the builder M. Lifschitz, who sponsored the excavation and provided workers and equipment.

The aim of the excavation was to provide a preliminary archaeological evaluation of the site. Two probe trenches were excavated (A north-south and B east-west), and two squares were opened at the eastern extremity of trench B.

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Before excavation, the walls of a pool were visible in the western part of the site. The external dimensions of the pool are 9.5 × 6.3 m; the walls are 1 m. wide and are constructed of squared basalt stones set in mortar. The western exterior wall stood up to a height of 2.8 m. and the pool's interior, lined with a thick layer of plaster, was 1.8 m. deep. The original depth of the pool may be estimated to have been about 2 m.; its capacity would hence be approximately 65 cu.m. A perforated basalt stone (hole diameter 8.5 cm.) found 0.4 m. from the base of the pool apparently served as the pool's outlet.

The pool was supplied by an aqueduct built to its western wall. We cleared approximately 20 m. of the aqueduct; it presumably continues westwards, below piles of rubble and the modern road. The aqueduct is 1.8 m. in height and 0.6 m. in width, and is similar to the pool in construction. The V-shaped water conduit is 0.35 m. and 0.20 m. wide at the top and bottom respectively, and 0.18 deep.

The pottery found in association with the pool and aqueduct indicates that both were probably constructed during the Ottoman period. The pool continued in use during the present century, as indicated by the modern pipes which pierce the pool's wall. Numerous small flower pots found adjacent to the pool were apparently related to the agricultural functions of the structure. It would seem that the pool was originally supplied with water by runoff or by springs to the west of Tiberias, via the aqueduct.

In the squares excavated at the eastern extremity of trench B, we uncovered a section of finely dressed basalt pavement measuring 7 × 3 m. The paved area continues southwards beyond the limits of our excavation. Four of the paving stones have small depressions which probably served for games. A well-plastered square storage installation (1.5 m. outer wall, 1 m. inner wall, 0.65 m. depth) was uncovered in the corner of the paved area. Fragments of pithoi were uncovered in the installation.

Small probes were excavated under several of the paving stones. A chronologically homogeneous pottery assemblage was found on and below the basalt paving. The assemblage included fragments of bowls, cooking pots, jars, jugs and lamps, all typical of the tenth century C.E. In one of the squares, we reached a sterile level at a depth of 1.6 m. without encountering remains of habitation predating the Arab conquest.

In the two probe trenches we uncovered architectural remains, ceramics and small finds. The pottery assemblage was very similar to that found on and below the paving, although here three late Roman fragments, a number of Byzantine fragments and one sherd of 'sgraffiato' ware typical of the Crusader period were also recovered. Ottoman and modern vessels occurred in the upper levels.

The main construction periods represented in the finds of our trial excavation are hence the tenth century and the Ottoman and modern periods. In the tenth century, Tiberias was the capital of the province of al-Urdunn and an important Jewish centre. The site was apparently deserted some time during the traumatic eleventh century. After a hiatus of centuries the pool and aqueduct were constructed in the Ottoman period to serve the surrounding agricultural area.

(Communicated by S. Dar and D. Adan-Bayewitz)

*Tel Yin'am, 1981**

The 1981 season of excavation of the University of Texas Archaeological Expedition to Tel Yin'am was conducted from 15 July to 21 August and from 25 to 30 October, directed by the author. The supporting staff consisted of Diana Furmanik, area and field supervisor; Marilyn Simon, senior area supervisor; Chana Pinto, registrar; Susan Vercellino-Dwyer, small object draftsman; D. Huli and R. Lewis, architects / surveyors; Z. Radovan and K. Vandivier, photographers; Deirdre Bloch and Patricia Kaplan, pottery restorers.

Excavation was confined to Area B on the west side of the mound. Our objectives for this season were: (1) to secure a fuller picture of the major LB II building in which the iron smeltery was located; (2) to determine whether the building was initially constructed in the thirteenth century or whether this phase represents reuse of an earlier

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building; (3) to explore the adjacent north and west of the building; and (4) to provide additional data for the transition from LB IIB to Iron Age I at Tel Yin'am.

A series of storerooms situated along the west side of the building proved to be part of the original construction. A series of newly excavated smaller rooms to the east of the north-western storeroom (which in our opinion served as a primitive iron smeltery) had a more complex history. The walls of these rooms abut one another and show other signs of additions and rebuilds. However, a probe below the cobbled floors of two rooms on the north-west side of the building revealed no trace of earlier surfaces associable with the building. Thus, the building was originally constructed on stepped levels, following the sloping contour of the mound in the thirteenth century B.C.E. Small finds clustered on the floor of a narrow room include a number of restorable pottery vessels: six imitation Mycenaean pyxides, an oil lamp, a chalice, a two-handled, flat-based, large bowl, an undecorated storage-jar and a krater. Small finds include a bronze arrowhead, a faience Mitannean cylinder-seal, glass and faience beads and a rare, fine, shallow 'Egyptian blue' bowl (I wish to thank Prof. Dan Barag for identification of the material).

In the area north of the building, we uncovered parts of an abutting structure. A cobbled floor reaching the north wall of the main building was bounded on the west by a north-south wall. On the east the cobbled surface continued below a secondary wall into an unexcavated area. The area to the west of the building was unpaved, but here too walls of subsidiary structures abutted the major building. This evidence of additional structures built against the northern and eastern walls of the building accords with the absence of doorways in either of the walls of the major building exposed thus far.

While the major structure remained in use throughout most of the thirteenth century, new buildings were constructed to the west and north of it and covered the remains of earlier structures. Of the buildings associated with the latter part of the thirteenth century, the most important excavated thus far is a partially excavated structure abutting the north wall of the major building. On the cobbled floor of the easternmost room exposed, beneath a thick layer of destruction debris, we found a dense concentration of sherds. Thus far, three unusually large biconical jugs, one piriform jug, a bowl and two storage-jars have been restored. Of outstanding interest is an unparalleled large stirrup jar (22.6 cm. diameter, 17.5 cm. height) datable to LH IIIB. The vessel is unusual both in its size and in the unique, two-register design on its shoulder: a flower pattern, elongated into a wing, which appears once in black on white and again in white on black.

This final LB phase of occupation ended in destruction. A deposit of ash, approx. 50 cm. thick, charred wood, fire-cracked rock and burned and disintegrated mud brick was found on the floors of the major building and the building to the north of it.

In a 2 × 2 m. probe beneath the floor of the excavated eastern end of the main structure in square M/12, we exposed part of the wall of a building, a large, fairly well-preserved pottery-lined oven and a surface with a large basalt mortar. The pottery from this phase, which may date from LB IIA is significant because of the early appearance of ridges around the base of the necks of the storage-jars, a characteristic of LB IIA and IIB storage-jars and pithoi at Tel Yin'am. While such ridges are common on LB pithoi and occasionally on jugs from Hazor, they are not found on the storage-jars from LB Hazor.

A relatively short period separated the destruction of the LB level from the first of a series of Iron Age I settlements. In some places the walls of the LB buildings were reused and new floors were laid directly above the destruction debris of the LB building.

(Communicated by Harold Liebowitz)

Nazareth 'Ilit

A salvage excavation of a group of rock-cut tombs on the eastern ridge in Nazareth 'Ilit (map ref. 181 233) was carried out by Nurit Feig on behalf of the Department of Antiquities and Museums in early December 1981.

During the previous two years, the ridge had been surveyed by Ariel Berman and was found to contain numerous burial caves. Four caves,

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which were found to have been robbed in antiquity, were excavated. Cave A, the northernmost one, consists of two burial chambers, one behind the other. The entrance is from the eastern wall and near the door in the northern wall are two hewn cists, one of them covered with a stone lid. A short narrow path leads to the second chamber, which consists of a large hewn cist with a small hewn repository adjacent to it, six *kokhim* arranged in two storeys, three in each storey, along the western wall, and another two *kokhim* along the southern wall, as well as signs of two additional *kokhim* in preparation. The second tomb (B) is a shaft tomb. A staircase consisting of seven steps leads down to the burial chambers. The northern chamber consists of two *arcosolia*. The southern chamber is 70 cm. lower than the shaft floor-level and was found bare of burial furniture. Another two burial caves (D, E) have a common courtyard. Cave D is a long cave with *kokhim* on each side. At the deepest point there is a podium; on it are another four *kokhim* and two repositories. From the nearest *kokh* to the entrance is a hole to cave E, which has only one large unfinished shelf.

The finds in the *kokhim* and on the floor-level of the caves are dated to the second–third centuries C.E.

(Communicated by Nurit Feig)

*Tel Dor, 1982**

The third season of excavations at Tel Dor was conducted in July and August 1982. It was directed by E. Stern on behalf of the Institute of Archaeology, Hebrew University of Jerusalem, and the Israel Exploration Society, in cooperation with L. Schiffman of New York University, H.P. Goldfried of the State University of California, Sacramento, and H.N. Richardson with a privately organized group of volunteers. Also on the staff were I. Sharon and S. Yankelevitch (field supervisors). D. Chen (architect); J. Berg (surveyor); Ayelet Gilboa and Bracha Guz-Zilberstein (registrars); Orna Cohen, Peggy Day, E. Frank, Dina Kaufman and Margaret Remeta (area supervisors and assistants); Doris Balsmeyer and Lauren Strober (draftsmen); Iris Kritsman (restorer); R. Yonkers (palaeontologist); Z. Radovan (photographer); K. Raveh and S. Dahan (administration).

The two main aims of the 1982 season were to deepen parts of the three areas excavated in 1980–1981 in order to enlarge the exposure of the Persian and Iron Age strata, and to enlarge the existing areas so as to enhance our knowledge of the Hellenistic town plan (Fig. 1).

The Iron Age. Remains of this period (mainly fortifications) are now known in all three areas. A trial trench on the slope of the mound in Area C confirmed the sequence of fortifications found in Area B in 1981. The mud-brick wall encountered there previously was found to be more than 2.5 m. thick here; it therefore must be a city-wall. Further excavations in Area B revealed the massive remains of an Iron Age gatehouse underneath the Persian and Hellenistic gates. It is built of cyclopean limestone boulders, measuring some 1.5 × 1 m., which must have been brought for this purpose from Mt. Carmel. Our knowledge of this structure is rather fragmentary, due to the later gate structures superimposed upon it, but from the exposed remains it is clear that the gatehouse projected inwards from the town wall to a depth of 14–15 m.; its width was probably 15 m. or more and its walls were at least 2 m. thick. The gatehouse is smaller than the six-room gatehouses at Hazor and Gezer, but fits perfectly the dimensions of the average four-room gatehouse, as in Stratum IVA at Megiddo.

Adjoining these fortifications two Iron Age occupation phases have so far been identified, but no structure is complete enough to allow a coherent architectural interpretation. The general impression is that this eastern part of the mound contains large buildings and open spaces, i.e. it is a public, rather than residential quarter. One striking small find of this period is an Assyrian cylinder-seal.

The Persian period. Some points concerning this period were clarified further. We have identified the threshold of the gateway in the Persian fortification, complete with the gate socket. Contrary to our expectations, it is not directly under the Hellenistic gate, but offset slightly to

*Cf. *IEJ* 32 (1982), pp. 107–117.

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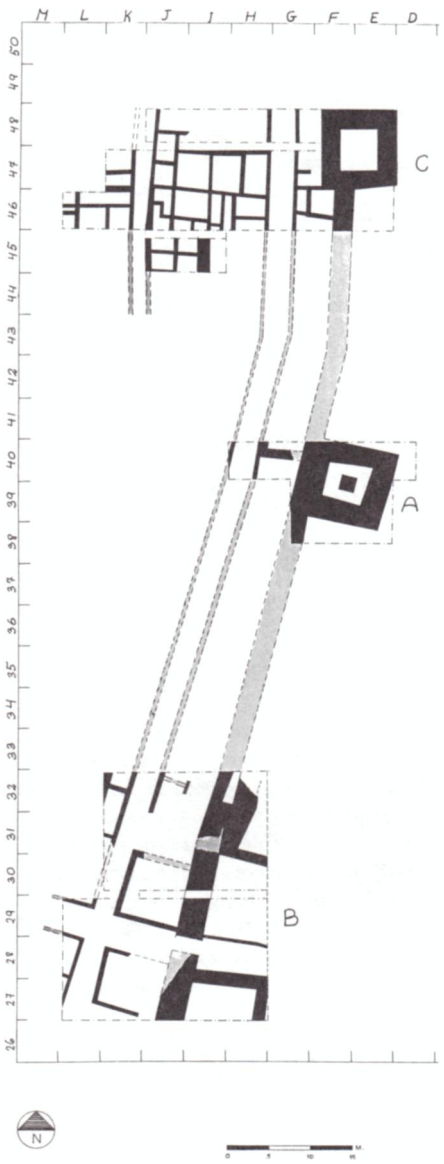

Fig. 1. Tel Dor, remains of Hellenistic period.

the south; it was found under the southern gate tower of the Hellenistic city-wall.

As we suspected in 1981, the orthogonal town plan of Dor probably originates in this period. In both Areas A and C the Hellenistic street directly succeeds a Persian one, and the outer wall of the residential insulae adjoining it is also Persian in origin. If this is the case, then the orthogonal town plan here may be as old as any found in the West.

A shallow pit dug outside the town wall in Area C and subsequently disturbed by the building of a Roman pipe contained fragments of at least five figurines (Pl. 15:C) and a concentration of red-figured sherds. Unlike the favissa found in 1980, this pit yielded figurines of predominantly 'western' style.

The transition between the Persian and Hellenistic periods. In 1981 we established the existence of a pre-fortification Hellenistic phase. In order to elucidate further this transitional period, we excavated outside and under the Hellenistic fortifications in Area C. Since there was no subsequent building here, the walls of this phase, built above the remains of the Persian city-wall, are preserved to a height of some 2 m. The town appears to have been unfortified at this stage, except for the thickening of the house walls adjacent to the slope of the mound.

To our surprise, we found that the fill inside these rooms, at least in the lower part, is not Hellenistic but purely Persian. It now appears that the Persian fortifications went out of use before the end of the Persian period, to be replaced by this post-fortification phase. It is not clear at present whether there is a single transitional stage, beginning towards the end of the Persian period (first half of the fourth century B.C.E.?) and ending beween 285 and 220, when the massive Hellenistic fortification was built, or whether there are two separate stages, late Persian and early Hellenistic. Phoenician influence appears to be as strong in this period as in the previous one, and a Phoenician ostracon found in Area C may date from this phase.

The Hellenistic and later periods. The previous seasons revealed a Hellenistic street, running parallel to the town wall and perpendicular to the main street leading up from the gate, and parts of residential insulae west of this street. A major step towards establishing the town plan was finding the next street and for this reason Area C was enlarged to the west (Pl. 15:B). This area was found to be badly disturbed by late stone robbing and for the most part the lines of the walls were traced by robber trenches. The street, however,

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was located, and it is indeed parallel to that found previously. It was found to have been reused and repaved continuously from the early Hellenistic to late Roman periods. The width of the insula in Area C was thus established as 15 m. and parts of the next insula to the west were uncovered. Further elucidation of the town plan will require the exposure of the width of this western insula, the identification of the intersection of this second street with the main street in Area B, and the establishing of the length of an insula.

(Communicated by Ephraim Stern and Ilan Sharon)

Caesarea, Ancient Harbour Excavation Project, 1982

From 22 May to 2 July 1982 underwater and land excavations were conducted in the harbour of Caesarea Maritima. The international consortium, which operates under the aegis of the Center for Maritime Studies of the University of Haifa and the Department of Antiquities and Museums, has been working in the harbour of Caesarea since 1980. A. Raban serves as director; R.L. Hohlfelder, J.P. Oleson and R. Lindley Vann are co-directors. This third season of excavation was generously supported by the Caesarea Development Corporation, the University of Haifa, the University of Colorado, the University of Victoria and numerous private donors. Over 60 volunteers from Israel, the United States, Canada, Australia and Sweden assisted in the excavations.

During the first season of excavation in 1980, the quay walls along the inner face of the southern breakwater and a possible wave-breaking wall along the seaward side of the structure were explored. In 1981, features in the bay south of the harbour were examined and found to be natural reefs, and excavation was begun in the entrance channel to Herod's harbour to determine its original dimensions and design. Two isolated concrete foundations for towers to the west of the harbour entrance (mentioned by Josephus: *Ant.* 15, 338; *War* 1, 413) were cleared and drawn, and soundings were made on the shoreline 300 m. north of the harbour, behind a possibly Hellenistic quay wall. During 1981, a team of architects also began mapping the harbour and drawing the areas which had been excavated.

The 1982 season had four main objectives: continued excavation in the harbour entrance, clearing of the north-western terminus of the northern breakwater to determine its design and construction, expanded excavation on the shoreline north of the harbour, behind the Hellenistic quay wall, and continuation of the mapping and drawing of all ancient and medieval harbour structures in the water and on land.

Excavation in the harbour entrance (*Area D*) was continued in 1982 with the goal of determining the original width and depth of the channel and the design of the terminations of the northern and southern breakwaters. A north-south trench 6 m. long was laid out in the channel 6 m. below sea-level, adjacent to large *kurkar* blocks (5.5 × 1 × 1.25 m.) tumbled from the end of the northern breakwater. The sand fill in the channel, containing sea-worn sherds of various dates and intrusive modern material, was removed by airlifts, exposing a sloping stratum of concrete and *kurkar* rubble washed off the southern breakwater. The lowest level of rubble, about 10 m. below sea-level, incorporated a rich deposit of pottery dating from the early Roman–Byzantine periods. Beneath the rubble, an irregular stratum of clay with lenses of sand, 10.5–11 m. below sea-level, rested directly on virgin sand, and contained numerous pottery vessels from the early first century C.E., including a Herodian lamp, stamped Arretine ware and Italian volute lamps. Clearly this stratum can be associated with the earliest period of the harbour's use. Well preserved pieces of rope, fragments of worked wood and an intact wooden sheave-block were also recovered, along with a bronze aryballos, bronze spikes, and lead sheeting and net weights.

A second trench 2 m. wide was laid out from the south end of the first, extending west up the sloping face of the rubble spill. The rubble was removed in steps down to about 10 m. below sea-level for a distance of 15 m., in an attempt to find the western face. Unfortunately, no structural remains were encountered, so further excavation will be required to determine the width of the harbour entrance.

Approximately 20 m. north-east of Area D, excavation was carried out around the north-western tip of the northern breakwater at a point

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where a large concrete block was visible at the edge of the structure (*Area G*). Removal of sand and rubble by hand and with an airlift revealed a block about 11.5 m. wide and 15 m. long with an irregular, eroded upper surface 4–5 m. below sea-level. The vertical sides of the block were well preserved, and extensive remains of the wooden formwork into which the concrete had been poured were found on the east, west and north sides. The lower surface of the block (6.4 m. below sea-level) was level and smooth and lay directly on sterile sand. The formwork, best preserved at the north-western corner, was built on massive sleeper beams 0.29 m. square which ran along the base of each face of the block and interlocked at the corners with simple lap joints. A series of uprights (0.12–0.16 × 0.23 m.) morticed into the horizontal beams at intervals of about 1.6 m. carried a double wall of horizontal planks 0.8 m. thick and 0.14 m. wide. The space between the double wall of planks was filled with a blue-green mortar containing large particles of tuff, pumice and lime. The fabric of the block is composed of the same material, with an aggregate of *kurkar* chunks. The upper part of the formwork was reinforced by a series of horizontal tie beams which have left their impressions in the concrete as they decayed. The formwork was protected from wave damage by a sloping rubble berm about 0.4 m. high piled against each face. Excavation may show that the body of the whole northern breakwater is composed of such large concrete blocks overlaid by ashlar paving and a spray barrier.

No pottery was found in any closed context associated with the block or its formwork. However, the berm at the south-western corner and its associated foundation fill have been eroded by wave action and broken pottery and metal artifacts were carried into a secondary deposit around and beneath the block. The pottery dates from the Herodian period through Byzantine and modern times. The metal artifacts included dozens of lead net and line weights, bronze fishhooks, coins and two pieces of statuary. The first, a solid cast bronze statuette of Zeus (8 cm. high) on a round base with convex sides, is slightly corroded but complete, except for a spear or thunderbolt once socketed into the upraised left hand. An eagle perches on the god's right hand. The second is the left arm (11 cm. long) of a solid-cast bronze Tyche. The arm, clearly female in character, holds an overflowing cornucopia and terminates in a square tang which was socketed into the shoulder of the statuette.

A second concrete block was discovered projecting from the sand 6.6 m. north of the first block in Area G, separated from the rest of the breakwater mass. Excavation revealed that the second block was built of the same materials and in the same manner as the first one, that the blocks had approximately the same orientation, and that their western faces were aligned. At its western corner, where it is best preserved, the irregular upper surface of the block stands 5.77 m. below sea-level, the regular lower surface 7.7 m. below sea-level. Although traces of a rubble berm survive around the block, only a few pieces of wooden formwork have been preserved, and the concrete mass itself was fractured and incomplete. On its southern face, the block tapers to a thickness of only 0.17 m. before ending abruptly in a small heap of rubble 12 m. east of its south-western corner. The western face was excavated for 6 m. to the north, but a further probe 12 m. from the corner did not encounter any structural remains. It seems likely that this block, whose complete dimensions will be revealed by further excavation, was tipped and fractured by the fault slippage which seems to have destroyed much of the outer harbour some time during the Roman period. It was probably built to serve as the foundation for the single tower supporting statuary mentioned by Josephus as standing to the left of the harbour entrance. The two towers he mentions to the right were examined in 1981 (see above).

The third area of excavation, *Area J*, is located 300 m. north of the northern breakwater, at a small headland where a quay wall built of *kurkar* blocks arranged as courses of headers extends from the shore into shallow water. A small sounding behind the quay wall in 1981 uncovered Herodian and Hellenistic pottery in two distinct strata. This excavation was expanded in 1982 and produced the first large deposit of Hellenistic pottery found so far at Caesarea. As yet, no coherent structure has emerged; the fact that many of the pieces were broken in antiquity but are complete or nearly complete, and the character of the strata, suggest a dump. Several bowls of relief-decorated Megarian and Pergamene wares

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were recovered, along with typically Hellenistic cooking pots, amphoriskoi, unguentaria and glazed fish plates. Work will be continued in this area in the future.

In 1982 for the first time the project had at its disposal four diving architects who, under the direction of R.L. Vann, prepared final drawings of the trenches excavated in the harbour, and of the structures found underwater and along the shoreline.

(Communicated by John Peter Oleson)

*Tel Aphek, 1982**

The tenth season of excavations at Tel Aphek-Antipatris was conducted in the summer of 1982 by the Institute of Archaeology, Tel Aviv University, in cooperation with Cornell University, New York, and Allegheny College, Pennsylvania. About 60 volunteers from the United States and Israel participated in the excavation, which was directed by M. Kochavi and Pirhiya Beck of Tel Aviv University, in cooperation with D.I. Owen of Cornell University and D. Hobson of Allegheny College. The expedition's staff included Z. Gal, W. Neidinger, Joan Rothman and members of the staff of the Institute of Archaeology, Tel Aviv University.

This season's work brought to light the earliest palace known so far at Aphek. This newly discovered palace is dated to the initial phase of the MB (twentieth century B.C.E.). Its mud-brick walls, laid upon stone foundations and coated with white plaster, were preserved to a height of 1.5 m. with a uniform width of 1.2 m. The construction of such a large public building at that period indicates an early date for the reurbanization of the country at the very beginning of the second millennium B.C.E. It also demonstrates the continued existence of a palace on the acropolis throughout the entire MB and LB.

The slightly later palace (eighteenth–seventeenth centuries B.C.E.) was further exposed during this season (Pl. 16:A). This palace, which was first revealed in 1979, proved to be far larger and much more impressive than initially anticipated. As yet, only one wing of this palace has been excavated, covering an area of about 1000 sq.m. Two massive pillar bases, built of large boulders each 2 m. in diameter, were found inside the largest room of this wing. The walls of the palace were also built of large boulders laid in courses and had a foundation 2 m. deep. This structure appears to be the most magnificent of Aphek's six palaces, an outstanding example of MB palace architecture in Israel.

A new phase of the site's long history was revealed by a trial probe dug under the Roman remains. Three habitation layers of the Ptolemaic, Seleucid and Hasmonean periods (third–first centuries B.C.E.) indicated that the Hellenistic city of Pegae had a long and uninterrupted history, thus closing the apparent gap between Canaanite-Israelite Aphek and Roman-Byzantine Antipatris.

Excavations at Roman Antipatris brought to light a small theatre (an *odeum*?) located by the southernmost extension of the city's *cardo maximus*. The theatre's *scena* rested upon ten arches, five of which were found intact. The *orchestra* was paved with perfectly matching stones. The lowest rows of the *cavea* were also exposed. There are clear indications that the construction of the theatre was never completed and that it was destroyed, together with the rest of the city, in the devastating earthquake of 361 C.E.

(Communicated by M. Kochavi)

Tel Gerisa, 1982

A second season of excavations at Tel Gerisa was conducted from 4 July to 27 August by the Archaeological Expedition to the Coastal Plain of Israel, as part of a regional research project in the western basin of the Yarkon River. Participants in the expedition included 25 staff members and seventy students, representing the following institutions: the Institute of Archaeology, Tel Aviv University, the Universities of Pennsylvania and of Minnesota, the University of California at Berkeley, the Wisconsin Lutheran Seminary, Macquarie University of Australia, Hamline

*Cf. *IEJ* 27 (1977), pp. 54–55.

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University of Minnesota and Stockton College in New Jersey. Beginning this season, the project was also sponsored by the Israel Exploration Society.

The project is headed by J. Muhly of the University of Pennsylvania. Z. Herzog is archaeological field director, A.F. Rainey directs the academic programme and Ora Negbi is coordinator of the ceramic processing. Lily Singer is senior registrar, assisted by Semadar Harpazi. A. Hai is photographer and Mira Barak and Miri Cook are restorers. Donna Leslie was surveyor. Administration and food preparation were handled this season by S. Suleimani and T. Foldey. Geological research in the vicinity is directed by N. Bakler of the Geological Survey of Israel. R. Gophna directs the archaeological survey. The late Shmuel Moshkovitz was stratigraphic advisor during the first two seasons and up to his untimely death in February 1983.

In accordance with the long-term programme, which aims to uncover broad areas of the site to determine the town plan, efforts were concentrated this season on expanding the fields dug during the first season (A, B, C); an additional field (D) was opened on the north side of the mound. During the second season it became clear that the areas excavated by the late Prof. E.L. Sukenik (1927–51) were much more extensive than was assumed on the basis of depressions visible on the surface. It appears that Sukenik filled excavated areas with the dump from new ones. It will thus be impossible to reconstruct the history of occupation in those areas.

The following is a chronological survey of our results to date:

MB II and LB I. Remains of these periods were uncovered in Field A (on the south-eastern crest of the mound) under the direction of A.F. Rainey with area supervisors Christina Somner and A. Ofer. Other assistants for part of the season were S. Boozer and G. Suleimani. A section of the mud-brick city-wall about 20 m. long was uncovered and a series of rooms which abut it were dated to the MB IIB. The floor of one room was removed; under it was found an earlier floor, also built against the city-wall, and dated by a good repertoire of vessels to the end of the MB IIA. The pottery included carinated bowls with gutter rims, some of them red burnished. The MB IIA stratum is, therefore, the latest to which the building of the city-wall may be assigned. It is possible, of course, that earlier floors may be found in future seasons.

Above the ruins of the destroyed buildings of the MB IIB were found walls of smaller structures, also built against the city-wall, dating from the LB I. Finds from this period include Bichrome ware with geometric decoration and animal motives such as a fish and a bull. Whatever remains there may have been of the LB II were eroded; only sherds from this period were found in pits of the Iron Age I dug into the LB/MB strata.

LB II. Remains from this period were found in the west-centre of the mound (Field C) by area supervisor S. Shalev, assisted by Y. Levi and R. Jyring. The principal architectural feature in this area is a floor made of small stones and crushed chalk, of which about 15 × 15 m. were uncovered. The walls associated with this floor were robbed, leaving only robbers' trenches. Above this white floor were found several later occupational phases, all of them extremely eroded. One of these phases included some plastered ashlar stones in secondary use. Remains of burned brick and clay, possibly from kilns, were found as well as fragments of small crucibles and the tube of a bellows. Of special interest are small finds such as a scarab, the head of a Cypriote zoomorphic vessel, a tiny 'Eye of Horus' pendant and a large number of basalt stone weights. This repertoire indicates that this was an area of crafts and commerce during the fourteenth–thirteenth centuries B.C.E.

To the south of Field C, investigations were made in the area dug by Sukenik in 1927. Although we went clear to bedrock, no trace of the gate mentioned by Sukenik was found. In the same vicinity we did find the deep shaft lined with huge ashlar stones which Sukenik had supposed to be part of the gate complex of the MB II. However, the presence of Philistine sherds of the late eleventh century B.C.E. in the foundation trench of the shaft precludes this. On bedrock, near the shaft, were a few rims of EB holemouth jars. In all areas of the excavation were found basalt bowls, grindstones of both basalt and 'beach rock', flint sickle-blades and flakes.

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The Iron Age. One of the surprises of the second season was the discovery of remains from the early Iron Age on the northern crest of Tel Gerisa. In Field D two areas were opened under the direction of F. Brandfon, with area supervisors J. Lawrenz and B. Knapp, assisted by Allison Schoenfeld and Kristi Werdin. The remains of a settlement, including fragmentary brick walls and beaten earth floors, could be dated to the twelfth century B.C.E. by the associated pottery (plain bowls, red-slip bowls and cooking pots with triangular profiled rims). Into this stratum were dug pits from the eleventh century B.C.E.; these contained Philistine sherds and 'collared-rim' pithoi fragments. It is possible that the earlier remains belong to a first stage of settlement on the northern crest, while subsequent settlers moved to the southern end, leaving the rest of the mound for pits and silos.

On the southern crest we continued to uncover the settlement from the eleventh and tenth centuries B.C.E. In Field B were excavated three areas under the direction of G. Cowling, R. Marchese and S. Derfler, assisted by M. Bendon and Ellen Cohen. Three Philistine phases were discerned, the latest of which was destroyed by fire. Since the walls and floors of this latter stratum were slanted at unusual angles, it may be surmised that the destruction was caused by an earthquake followed by local fires. Fragments of many vessels were found in the wreckage of these buildings; they represent a broad sample of Philistine vessels from the end of the eleventh century B.C.E.: bowls with typical Philistine decoration, red-slip bowls (only a few burnished), spinning bowls, a goblet, a beer jug, flasks, various types of storage-jars and a pair of bronze cymbals. The repertoire resembles that of Stratum X at nearby Tell Qasile.

The remains of the Philistine period were found in a narrow strip on top of the mound between Sukenik's excavation on the south and the steep incline of the mound on the north. Accordingly this settlement covered an area of about 3 dunams. The remainder of the site was probably used for agriculture; into the raised edges many storage and refuse pits were dug.

On top of the ruins of the Philistine settlement a layer of grey soil and ash was laid in order to prepare the surface for the next inhabitants. Into this grey layer were dug the foundation trenches for stone walls, uncovered just below the present surface. From the floors of this latter stratum we retrieved pottery vessels with hand burnishing typical of the tenth century B.C.E. Though no traces of conflagration were found, it seems that the site was abandoned in haste, since some of the vessels were still intact on the floors. The settlement of the tenth century was very limited in area, even in relation to the preceding Philistine occupation. This was obvious in the south-western part of the mound, where pits and silos were dug into the dwelling remains of the Philistine stratum. Thus, one may estimate the area of the tenth century settlement as about 2 dunams.

The Early Arab period. Occupation on Tel Gerisa was renewed during the ninth–tenth centuries C.E. Remains from this period were found in a narrow strip on the northern edge of the mound, consisting mainly of round structures of field stones which served as column bases. In some cases only the robbers' pits were found. Pottery from these pits included vessels of pale green clay, glazed pieces and hand-made closed kraters with horizontal ribbon handles.

(Communicated by Ze'ev Herzog)

*Shiloh, 1982**

The Land of Israel Studies Department of Bar Ilan University carried out a second season of excavations at Shiloh, lasting for six weeks. The expedition was directed by I. Finkelstein with the help of S. Bonimowitz and Z. Lederman, who was also the surveyor. The staff included Penina Ben-Hananyah and Arielah Cohen (registration), S. Yosef and Tirzah Yifrach (camp administration), A. Demsky, Amalyah Katznelson and M. Kislev (restoration), Bernadina Lutinger (plans and pottery drawing), Michal Rosh-Ben Ami and M. Weinberg (photography), I. Adjeman, A. Bornstein, A. Feldshtein, Tamar Hamer, Michal Iron-Lubin, I. Katz and S. Piphano (area supervisors). The expedition was generously

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assisted by a grant from the Moskovitz Foundation for the Land of Israel Studies (Bar Ilan Univerity) and the Dorot Foundation (U.S.A.). Much assistance was afforded by Y. Magen, the Archaeological Staff Officer for Judea and Samaria, the Shomron Seminary, the Israel Defence Force and the modern settlement of Shiloh. About 80 volunteers participated in the work each week, consisting of students of Bar Ilan University, youth groups from the Bnei Akiva movement, teachers in army service and others.

In this season two areas excavated in the first season were enlarged: Area C on the western slope of the mound and Area D in the north-east of the site. In addition, five new areas in different parts of the site were opened up: Area F in the north-west; Area G on the south-eastern slope; Area H in the north-west, Area J in the south-west, and Area K in the north.

Area C was expanded this year, mainly towards the north. One square was also excavated in the south, in order to check whether the buildings of Iron Age I continue in this direction. Here was exposed the continuation of the MB glacis found in the previous season together with its massive retaining 'foot'. No later remains were found above it apart from the wall running south-north which encloses the Roman-Byzantine settlement. In the north-eastern corner of the area was uncovered part of the MB city-wall, which was built of large field stones. Its outer face is extremely well preserved, but the width of the wall cannot be determined, as its inner face is hidden beneath the late wall mentioned above. The city-wall here forms a sort of corner and its continuation is mostly hidden beneath later buildings to the east.

In Iron Age I the MB city-wall was still standing; the builders of the pillared buildings could lean the back of Buildings 312 and 335 against it and use it as a retaining wall for the buildings in the east of Area C, in the direction of the summit. The plan of the Iron Age I pillared buildings is now clearer: as we saw in the previous season, they were built on two levels, divided by a long terrace wall. This year the excavation of the terrace wall was completed: constructional pillars are bonded into it, three of which served also as the westernmost of the row of pillars in Building 312 (see below). In between the pillars the terrace is built of small stones that also fill the space between the sloping bedrock and the floor of the upper buildings.

On the upper level were two buildings with a corridor between them. In the southern building (312) were four aisles divided by three rows of pillars. The building is enclosed in the west by the terrace wall and in the east by a wall whose outer face only is exposed. It is possible that this is part of the MB city-wall which was reused in Iron Age I. The entrance to the building was probably from the corridor to its north. The plan of the northern building (335) was apparently similar, though it has not yet been completely excavated; between the pillars of the southern row was a partition wall of one course of stones. The floors of the aisles in Building 335 were not on one level. The nature of the western wall of the building has also not yet been fully clarified, but since the topography here was steep, a retaining wall was built into which two constructive pillars were bonded. It appears that both these buildings were of similar dimensions, about 12 m. long north-south; the distance between the rows of pillars was generally uniform. Access to the level of the pillar-buildings was seemingly via steps ascending from the east.

On the lower level the excavation of Hall 306, situated immediately below Building 312 and the corridor, was completed. The entrance to the hall, which measured 12 × 3.5 m., was apparently via stairs from the corridor in the upper level; unfortunately this spot was disturbed by a Byzantine furnace. The western wall of Hall 306 was exposed this year for its entire length.

So far about 25 collared-rim jars have been found in the pillared buildings (Pl. 16:B). All were leaning against the walls and some were even inserted into the floors. In Hall 306 they were arranged in a row along its southern, eastern and western walls.

In the north of Area C, outside the MB city-wall and above the mud-brick material in the northern part of Building 335, a dump was excavated which contained a large quantity of Iron Age I pottery and animal bones. In the dump some outstanding finds were discovered: a bone seal(?), a cooking pot fragment with a lioness' head relief, a krater fragment with a ram's head relief beneath its handle and parts of a large

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cult stand with applied animal reliefs on its sides: a lioness, a horse and a scene of a leopard attacking a deer. It seems that all this material was collected at some time after the end of Iron Age I and thrown onto the slope.

Area D. An additional part was uncovered of the MB wall, which is now exposed for about 30 m. Outside the wall a section was cut in the glacis, first manually and subsequently mechanically. The upper layer consisted of reddish-brown earth and beneath it appears the main component is 0.7–1.3 m. of hard white chalky material. Below this there is, in some spots, a layer of reddish-brown earth and below it light yellowish material. The height of the wall in the section is about 5 m. About 3 m. from the city-wall was uncovered a wall built of medium-sized stones standing to a height of 3 m., probably a retaining wall which protects the base of the city-wall and consolidates the glacis on the steep slope. In the three upper layers of the glacis was only a small amount of pottery. In the white material a 'Hyksos' scarab with a geometric pattern together with its ring was found. In the lower yellowish layer many MB IIB sherds were found, perhaps belonging to the first stage of settlement at Shiloh which preceded the fortifications.

The expansion of the area this season revealed the existence of an LB II stratum, to which the painted sherds and fragments of Cypriote pottery found in the previous season should now be attributed. This season some adjacent loci of this period were excavated; they yielded additional fragments of Cypriote pottery, including two bowls with wishbone handles, and local decorated pottery. In the northern part of the area was found another section of pebble flooring of Iron Age I which reached the destroyed MB wall and used the top of it. The relation between the Iron Age I silos in Area D and the pebble flooring is not clear.

Area F was opened to clarify independently the stratigraphy inside the MB fortifications in an area adjacent to that excavated by the Danish expedition in 1932 (our Area H), and with the intention of connecting the two areas later. A Roman-Herodian living floor was laid over fill which made use of the top of MB walls. The walls connected to the city-wall were preserved to a considerable height, but we had not reached the MB floors by the end of the season.

Area G. On the terrace on the south-eastern slope, three squares were excavated. Here mainly Hellenistic material was found, badly disturbed owing to the steep slope and later pits dug into it. Part of a Hellenistic building was uncovered, as well as remains of an Iron Age II building.

Area H, excavated by the Danish expedition, was first thoroughly cleaned. Subsequent stratigraphic and architectural probes were intended to clarify questions which remained unclear after the previous excavation. A check was made of the relation between Rooms M and L and the solid wall. Though work has not been completed, it is possible that the rooms were incorporated in the fortification at a late stage, as claimed in the excavation report. In Room U a level with Iron Age material was excavated. It is connected to the top of the inner wall of Rooms M and L and may provide an indication for dating the latter. The southern limit of the Danish excavation was made into a vertical section showing a thick accumulation of mud-brick material and debris on a floor with MB vessels adjacent to the wall. At one spot is a stone-lined pit of Iron Age I dug into this mud-brick material. From our work on the western part of the city-wall's outer face it became clear that it is founded here on bedrock. Finally we examined Wall AA at the foot of the mound, defined by the Danish expedition as the LB city-wall. Between its stones was found Late Roman-Byzantine material; we deduce that it was built at this time as a terrace wall.

Area J was opened up because of the identification on the surface of a massive wall, built of large field stones in straight courses and preserved to a height of about 3.5 m. The face of the wall was cleared for 19 m. At both ends are corners and from here walls continued in a northerly direction into the terrace. The wall slants slightly and is only one stone thick; it thus appears that it was not a free-standing structure, but a sort of rectangular podium for a building. A probe was carried out on the top of the terrace, inside the wall, yielding only mixed pottery. Outside the structure an Iron Age I living level was observed in the section. A little further north,

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on a higher terrace, part of the MB city-wall was uncovered. It is founded here on bedrock and has a thin layer of crushed limestone. In the south-western corner of the fortification the glacis was found in a trial trench dug mechanically.

Area K is located in the north. Two squares on two terraces were opened; in the southern square part of a Byzantine building was excavated and in the northern square, close to the surface and above MB mud-brick material, Iron Age I silos were found.

(Communicated by I. Finkelstein, S. Bonimowitz and Z. Lederman)

*Tel Batash (Timnah), 1982**

The fifth season of excavations at Tel Batash (Timnah) was sponsored by Southwestern Baptist Theological Seminary in collaboration with the Institute of Archaeology, Hebrew University of Jerusalem, from 30 June to 30 July 1982. G.L. Kelm was expedition director and A. Mazar archaeological field director. The archaeological staff included B. Brandl, T.V. Brisco and M. Fleitmann (area supervisors); L. Ritmeyer (architect), Linda Kelm, Orah Mazar and Osnat Misch-Brandl (restorers). Work continued in Areas B, C and E.

Area B. A large portion of the Stratum VIII building, partially exposed during the previous season, was uncovered. Two additional rooms to the north and south were cleared. Each of the rooms had an entrance into a large hall to the east which was paved with cobblestones. The building was destroyed by intense fire. Beneath a heavy burnt destruction layer, the rooms' floors were covered with large quantities of restorable pottery which may be dated to the second half of the fifteenth century B.C.E. The rebuilding of the outer walls followed the original plan, while the interior plan was completely revised during Stratum VII (fourteenth century B.C.E.).

Area C. Excavation of a large structure of Stratum V, discovered during the 1981 season and believed tentatively to be the Philistine city-gate, continued. The structure, attached to what appears to be a massive city-wall, is located in the area of the gates of later periods, and thus is assumed to have been a gate. However, its plan, though incomplete at present, is not characteristic of a gate complex. The structure is composed of a series of rooms with massive brick walls laid on stone foundations. A wall appears to screen the supposed gate passage. Its well-defined exterior dimensions are at least 11 × 15 m. The structure may tentatively be identified as a fort attached to the city-wall or a gate complex of unique plan, possibly with a 'bent axis'. The stratigraphy of the gate area continues to be problematic. Area supervisor B. Brandl has suggested that the 'bent axis' approach and two stone towers earlier attributed to Stratum IV (tenth century B.C.E.) should be related to the gate of Stratum III.

Area E. A Stratum II house, attached to a dwelling previously excavated at the western edge of Area D, was uncovered. Approximately 500 sq.m. of the Iron Age II city have been exposed, providing insights into the urban planning. From the street along the city-wall, an entrance chamber of the new building provided access to a courtyard, divided by four monolithic pillars into roofed and unroofed areas. A side room adjoining the entrance contained a large baking oven. A room was excavated east of the courtyard. Additional excavation is required to determine whether another room exists on its south to make up a characteristic 'four-room' house plan. The main feature of the courtyard was an oil press containing a large stone trough and two stone vats built into a plastered stone platform (Pl. 15:C). Two large stone weights, probably used with wooden beams to press the olives, were found in the courtyard. The crushed olives were probably pressed in straw-woven baskets over the stone vats to extract the oil (a similar installation was uncovered by Macalister at nearby Gezer). A large quantity of restorable pottery on the floor of this building was recovered beneath a heavy destruction level and can be dated to the end of the seventh century B.C.E. (end of Stratum II).

(Communicated by George L. Kelm and Amihai Mazar)

* Cf. *IEJ* 32 (1982), pp. 153–154.

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*Tel Miqne (Ekron), 1982**

The second excavation season at Tel Miqne (Ekron) was conducted from 18 April to 14 May. The project was again sponsored by the W.F. Albright Institute of Archaeological Research and the Institute of Archaeology of the Hebrew University of Jerusalem, with the assistance of the Brandeis University / American Schools of Oriental Research Joint Archaeological Program in Israel. A team of twenty-six members continued to excavate the six areas opened in the first season in 1981, on the slope of the north-east acropolis of the mound. The participants included fourteen students of the Brandeis/ASOR Program, area supervisors B. Gittlen, A. Killebrew, J. Mabry, E. Mascoop, A. Rosen and A. Roshwalb, cartographer B. Alpert, photographers S. Gitin and D. Harris, registrar P. Lindsey, major-domo S. Dahan, Kibbutz Revadim logistical liaison N. Aidlin and directors T. Dothan and S. Gitin.

The results of the 1982 season indicated the existence of 13 occupation phases of various types from the fourth through the first millennia B.C.E. Phases 13 (Chalcolithic), 12 (EB I–II), 11 (MB IIIA–B) and 10 (LB I–II) were represented solely by ceramic and lithic finds in backfills of the Iron Age I.

In *Phase 9*, the earliest architectural evidence thus far excavated, as in the 1981 season, was the north-south mud-brick city-wall which ran along the bottom of the slope in Area 6. It was exposed to its full width of 4.25 m. which extended westwards into Area 5. The mud-brick surface sealing the artificial slope which lay against the outer face of the mud-brick city-wall was further traced into Area 7; it appears to have served as a water run-off surface helping to maintain the stability of the mud-brick wall and its foundations. The *terminus post quem* for the construction of Phase 9 at the beginning of the twelfth century B.C.E., suggested in 1981, was based on the latest pottery evidence within the mud bricks of the city-wall. These mud bricks produced a large quantity of EB, MB and LB sherds and a few examples of forms that may be associated with the very end of the LB. In the 1982 season, the mud bricks of the city-wall yielded similar groups of pre-Iron Age I pottery. On the other hand, the sealed fill of the artificial slope, while producing a significant amount of EB, MB and LB sherds, also contained some Mycenaean IIIC:1b and Philistine forms. A similar ceramic profile was in evidence on the 'event' surfaces of a small probe in Area 7 immediately below the artificial slope. While the structural relationship of the artificial slope and the mud-brick city-wall seems to show that they were built in the same phase, the ceramic data indicate that the artificial slope may have been a secondary feature, perhaps part of a repair to the city-wall system.

Phase 8 was represented in the 1981 season by a single occupation phase. However, new evidence from the 1982 season has shown Phase 8 to contain three occupation phases separated by three preconstruction phases. Unfortunately, the connections between the Phase 8 surfaces and architectural units in Area 5 and the mud-brick city-wall in Area 6 have eroded away. Phase sub-8C, composed of mud-brick wall collapse and a covering sediment layer, indicated that the city-wall was probably repaired and the level of the area along its inner face raised and prepared for the laying down of a new floor in Phase 8C. This floor was in turn covered by the sub-8B layer of mud-brick sediment. Phase 8B consists of two mud-brick walls, a surface and a fire installation. In Phase sub-8A the level was again raised by a sediments layer upon which the two Phase 8A mud-brick walls in Area 5 and the two stone walls in Area 4 were founded. While each of the three occupation phases demonstrated the use of different types of architectural units and construction techniques, they have one attribute in common — their alignment with the mud-brick city-wall with which they were associated.

The dating of Phase 8 is clearly Iron Age I based on the lack of any later ceramic data. Phase 8C was represented by a surface which covered most of Area 5; its pottery, as well as that of the fills below it, was comprised of a homogeneous assemblage of Iron Age IA coarse wares. The fills above Phase 8C and below Phase 8B contained the same Iron Age IA coarse wares and some Mycenaean IIIC:1b sherds, but no

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definite Philistine bichrome material. The Phase 8B architectural elements contained an unusually large sample of Mycenaean IIIC:1b forms and a few Philistine sherds. Only in Phase 8A was a significant number of Philistine sherds found. The following conclusions can be drawn: Phase 8 can be assigned to the twelfth–eleventh centuries B.C.E. and Mycenaean IIIC:1b can be assumed to have both preceded and co-existed with Philistine bichrome ware.

Phase 7 was shown in the 1982 season to have two occupation phases in Area 4, as opposed to the one phase indicated in 1981. The earliest, Phase sub-7, was represented by a mud-brick wall founded above the fill that covered the walls of Phase 8A in Area 5. The latest occupation phase, built over the mud-brick wall of sub-Phase 7, consisted of a three-row mud-brick wall 2 m. in width which extended for 5 m. across the length of Area 4 on a line parallel to the mud-brick city-wall. The floors, built against the inner face of the 2 m. wide wall, were separated by a significant accumulation of occupational build-up, thus suggesting at least two use-phases for this building. The 2 m. wide wall may have been part of a secondary fortification system or a large public building. The latest pottery of Phase 7 was of Iron Age I, including coarse wares and an unusually high concentration of Philistine ceramic forms. The relative stratigraphy and ceramic evidence suggest a date within the eleventh century B.C.E.

Phase 6 was previously tentatively described as a transitional phase of the Iron Age I/II. However, the 1982 season proved it to be part of an extensive late Iron Age I occupation phase with four rooms extending over Areas 4, 3 and 1. In Area 4, the two western rows of the 2 m. wide mud-brick wall of Phase 7 were probably shaved down and the eastern row left standing. Along the southern end of the eastern row, a stone socle was set into it on which an east-west mud-brick wall was built, forming a corner. The wall was then repaired and two cobble surfaces (one reassigned from Phase 7 of 1981) were laid up against its inner face. At the northern end of Area 4 an east-west mud-brick wall divided these cobble surfaces into two rooms with a connecting stone entrance-way. The southern room extended into Area 3 and was enclosed by another north-south mud-brick wall. To the west of this wall was a rectangular room enclosed to its west by a mud-brick wall in Area 2, where two mud-brick walls cornered making the fourth room of Phase 6. The main feature of this building complex was the plaster floor within the rectangular-shaped room in Area 3. It has two basin-shaped depressions which may indicate the presence in antiquity of standing objects or architectural features which did not survive, and two plastered drainage channels. In the west of the floor was a large stone, perhaps a step, shelf or pillar base. Six restorable vessels were found lying on the plaster floor, one a small votive juglet, and nearby were two flint cores, several flint flakes and two unusual incised bovine scapulae. These scapulae have close parallels in a twelfth-century temple at Enkomi. The plaster installation, its pottery and small finds have cultic connotations.

The latest pottery from sealed loci of preconstruction Phase sub-6 was Iron Age I with a few Philistine forms. The restorable pottery from the plaster floor was also Iron Age I, but this assemblage lacked the typical Philistine bichrome ware. As Phase 6 was covered by the sub-5 preconstruction fill which served as the foundation for the earliest Iron Age II occupation phase, a date in the late eleventh century for Phase 6 is most probable.

Phase 5 was again designated as the earliest Iron Age II occupation phase. Below its architectural units found in Area 2 in 1981 was a series of mud-brick detritus fills, the remnants of the mud-brick structures of the previous occupation. While pottery of Iron Age I predominated in these loci, the latest group of forms could be dated to the tenth-ninth centuries. The absence of late eleventh–early tenth century ceramic forms may indicate a gap between the Iron Age I and II.

In *Phase 4* evidence for the Iron Age IIB was greatly enhanced this season. The large stone tower in Area 3 was shown to continue into Area 2. New architectural features were added to the plan of this structure including a foundation wall, threshold and cobble surfaces. These elements sealed the Phase 5 surfaces used with the tower walls. The latest pottery in the make-up of the last tower floor and the pottery lying on it ranged

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from the mid- through the second half of the eighth century.

Phase 3, as in 1981, was shown to be the latest occupation phase in the Iron Age II. In Area 2, a tower wall composed of huge stones was built over the Phase 4 tower and set into a foundation trench which cut the Phase sub-3 preconstruction fill. This fill covered all the architectural elements of Phase 4. The latest pottery from this fill has been assigned to the last quarter of the eighth century. The locus designated as a mud-brick construction in 1981 was redefined as a surface/floor for the tower wall.

Phase 2, possibly a squatters' phase, remained the same as in the 1981 season though some supplementary data were added. Of *Phase 1*, mostly late Bedouin burials, one burial was excavated in Area 2.

(Communicated by Trude Dothan and Seymour Gitin)

*Jerusalem, City of David, 1982**

The fifth season of excavations was conducted between 4 July and 27 August under the auspices of the City of David Society, and directed by Y. Shiloh of the Institute of Archaeology, Hebrew University of Jerusalem. The senior staff included D.Z. Ariel, Jane Cahill, A. de Groot, Elat Mazar, Y. Shoham and D. Tarler. They were assisted by Ingrid Bichonsky, Jody Garfinkel, D. Glick, R. Greenberg, J. Nadelman and A. Teller. Other staff members were G. Lipovich and W. Schneider (surveyors), Tamar Shiloh (camp and registration), I. Harari (photographer), Orna and Y. Val (laboratory) and E. Ben Meir (administrator). In addition to the City of David Society, the Jerusalem Municipality and the Yad Avi ha-Yishuv (Rothschild) Foundation again extended assistance to the expedition. Some four hundred volunteers from all over the world took part in the excavations.

Excavations continued in Areas B, D_1, E_2, E_3, G and J. Two new areas were opened, A_2 at the southern extremity of the site and D_2 linking Areas D and E_2 at the middle of the eastern slope. By the end of the season, about 2.5 dunams of the site had been excavated, and in most areas bedrock was reached.

Area A_2 at the southern end of the City of David, is situated on the rock scarp overlooking the runoff channel leading from the Siloam pool. The excavators here cleared a wall functioning as both city-wall and revetment wall, built atop the scarp. The 25 m. long wall was preserved to a height of 4 m. Three phases were distinguished, from the Roman, Byzantine and Islamic(?) periods. Along the summit a water-channel was quarried and plastered during the Second Temple period. After it went out of use it was filled with dumps datable to 70 C.E. The significance of the city/revetment wall was not clarified, but it is clear that the presumed Iron Age fortification wall has not been preserved here. The wall discovered would have served as a support for the southernmost terrace of the City of David, and perhaps even as part of its fortification at this spot; its date, however, is not before the Second Temple period and more probably in the Byzantine period.

Area B. The excavation of a rectangular house constructed in the seventh century B.C.E., at the foot of the slope and east of the Siloam Channel, was completed. To the east of the house was discovered the bedrock scarp, which falls an additional 3.5 m. toward the Kidron Valley. At this level was uncovered a rock-cut water-channel dating from the Second Temple period, which conducted water southwards to the area of the pools. A terrace wall preserved to a height of 2.5 m. protected the channel. To its west, in very deep bedrock depressions, a clean locus of Chalcolithic pottery without the usual mix of EB I sherds was discovered for the first time at the site.

Area D_1. Excavation of modest structures dating from the Iron Age II (eighth century B.C.E.) was continued. These were built atop the bedrock and were extramural. In one spot, a layer free of later stratigraphic contamination was preserved, containing pottery sherds of the twelfth to tenth centuries B.C.E., which comprise the first stratigraphic / ceramic evidence of the Iron Age I Jebusite settlement in Jerusalem.

* Cf. *IEJ* 32 (1982), pp. 157–158.

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Area D_2. The purpose of excavation here was to link Area D with E_2. The Israelite city-wall was uncovered along its entire 25 m. length between Areas D_1 and E_2. Beneath dumps of 70 C.E. a structural phase of the Hellenistic period was discovered, comprising support walls and a wide staircase which apparently connected the Hellenistic terraces along the slope, both above and below the earlier line of the Israelite city-wall. It is possible that this system was an element in the ascent to a blocked gate(?) in the 'First Wall', excavated in Area D during the 1978 season. Quarrying debris from the Persian period was found between the base of the Hellenistic stratum and the top of the destruction collapse, and the city-wall of the end of the Iron Age.

Area E_1. Excavation continued this season along the upper terrace, in a section begun in 1978, and on the lower terrace just inside the city-wall. Along the northern side of the upper section, the southern wall of the great rough ashlar structure was exposed, built atop the upper terrace towards the end of the Iron Age. The wall was preserved to a height of 3 m. Within the section itself, fill layers and floors of domestic eighth century B.C.E. structures were exposed. Beneath these were eleventh–tenth century phases. Close to the bedrock scarp at the upper extremity of the section, fill levels contained quantities of ceramic and faunal remains dating from the MB IIA–B and LB. Adjacent to the city-wall the excavations revealed a number of new stratigraphical phases. In several places on the bedrock, beneath structures of the Iron Age II (eighth-sixth centuries B.C.E.), was revealed a poorly preserved occupation phase of the tenth century. During the season it was possible to confirm that the city-wall was first constructed at the end of the MB IIA or the beginning of the MB IIB, *c.* eighteenth century B.C.E. Three clear structural phases of this period run up to the contemporary city-wall, which later served as the foundation and core for the Iron Age city-wall following the same line. This season, remains of a rectangular domestic structure dating from the late EB I or early EB II were discerned. Previous seasons had yielded only scattered pottery of this period. The walls of the structure were built on the bedrock and continued under the base of the MB IIA–B city-wall.

Area E_3. Excavation was completed of Hellenistic support walls, partially continuing those along the upper terrace of Area E_1, for a combined length of approximately 40 m. Excavation of the 'columbarium' structure, belonging to the latest structural phase in the Iron Age II(?), was also completed. Throughout the area a system of walls is coming to light, representing the direct extension of building assemblages discovered in Area E_1 to the south, and dating from the eighth-sixth centuries B.C.E. In one of the structures was found a small cell in which was a stone installation reminiscent of one found in the toilet next to the 'House of 'Aḥiel' in Area G, and which must have served the same purpose.

Area G. This season excavation of most of the squares begun previously was completed, and a strip of squares was opened east of the 'House of 'Aḥiel' and the stepped stone structure (Pl. 15:E). In a number of places the stone fills belonging to pre-Iron Age terraces were investigated; they comprise a massive podium constructed during the LB II. Excavations continued along the stepped stone structure. Another 10 stepped courses were revealed, whose construction was of somewhat smaller stones than previously discovered. Altogether, the stepped stone structure has thus far been exposed to a height of 17 m. Atop the structure in the Iron Age II was built a thick revetment wall in order to support an upper terrace of buildings, among them the 'House of 'Aḥiel'. Its construction disturbed a stratigraphical layer containing tenth century B.C.E. pottery; it runs up to the stepped stone structure and thus dates it.

During the excavation of a new section in the north-eastern part of the area, the stratigraphy of Area G was reexamined. Byzantine and Roman dumps were superimposed upon the pebble/clay lenses of the Hasmonean glacis, which in turn overlay poor Persian period walls. These last were built upon, and adjacent to, the collapse of an Iron Age structure. The ashlar stairs leading to the building's second floor were discovered in 1980. The western part of the building was preserved to the height of the second floor, approximately 2.5 m. Its ground floor was covered with a thick burned layer, earning the structure the name of the 'burnt house'. It contained many small finds, including pottery

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vessels, arrowheads, an iron axehead, stone weights and bone and ivory fittings for wooden furniture. A most unusual find was small pieces of burnt wood carved in relief with motives like those of ivories, such as the palmette. All these finds represent dramatic evidence for the destruction of this quarter of the City of David in 586 B.C.E.

In the central part of the area, immediately adjacent to and east of the revetment wall at the base of the upper terrace, excavation began of the lower terrace of structures beneath that of the 'House of 'Aḥiel' and the 'burnt house'. Excavation of a narrow, 1 m. wide strip east of the revetment wall, and atop a hard-packed mud-plaster floor, yielded a group of pottery vessels, some of unique forms, four small stone altars(?), bronze and iron arrowheads and 50 clay bullae that had been baked by the fire of the destruction and were therefore well preserved. The bullae were found scattered on the floor in the corner of the structure. Most of them bear readable names in a well-known formula, e.g. '(belonging) to Benayahu son of Hoshayahu' (Pl. 15:D). The outstanding name is that of 'Gemaryahu, son of Shaphan', who served as scribe to King Yehoiakim in Jerusalem (Jer. 36:9–12). The appearance of this name underlines the importance of the entire assemblage, which must have included a group of documents written on papyrus and sealed with bullae, some of which bore the names of royal officials who were parties to those documents, such as Gemaryahu ben Shaphan. It may, therefore, be possible to interpret this structure as part of a royal chancellery, situated in promixity to the Temple Mount and the City of David's acropolis.

Area J. This year, with the assistance of volunteers and a youth group from the Centre for Cave Research at the Ophrah Field School, the clearing of Warren's Shaft was completed in its entirety, from the 'vaulted chamber' to the vertical shaft. With the work on this Israelite water system virtually finished, next season the area of the entrance to the system will be excavated, with the intention of preparing its final restoration and opening to the public.

(Communicated by Yigal Shiloh)

*Arad, 1982**

The sixteenth season of excavations in the ancient Canaanite city of Arad took place from early July to mid-August 1982. The excavations were directed by Ruth Amiran on behalf of the Israel Museum, the Department of Antiquities and Museums, the Israel Exploration Society and the National Parks Authority.

The team included: Ornit Ilan, R. Goethert and J. Garfunkel (area supervisors); P. Loupen and I. Watkin (surveyors); A. Talmy and R. Goethert (photographers); S. Haupt and Raqefet Hess (finds).

At present the main efforts of the core-staff of the expedition are being concentrated on preparing for final publication the results of the second series of excavations, begun in 1971 (*Early Arad* I, which has already appeared, covers the seasons of 1962–1966). Consequently, the 1982 season had the following limited objectives: (1) to clarify a number of points which our work in the laboratories had revealed as in need of further study and (2) to elucidate further the problem of the water-supply systems which served the ancient city and the later settlements which existed on the high mound after the city had been abandoned. Together with restoration work on the Israelite well, executed on behalf of the National Parks Authority by Mr. Aude el-Nabari and his expert crew, we continued our research on the water-supply problem. The picture is gradually becoming clearer and the history of this important spot now seems to be as follows. A reservoir in the heart of the city served the large population of the city during the entire period of its existence, the EB II. Its importance in the life of the city is evidenced by the impressive girdle of buildings surrounding it, each of which seems to have had a special function in the water-administration of the city authorities. The most remarkable of them is a large building (19.5 × 9.5 m.; thickness of outer walls 1.5 m.; thickness of inner walls 1.1 m.). We have suggested the identification of this building as a Water-Citadel, which served those responsible for the allocation of the water. This

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season we excavated within the building and clarified some architectural points, mainly in its inner walls. The final plan consists of five parallel long, narrow halls, almost equal in width. Unfortunately no hint of either the main entrance to the building or the entrances connecting the halls has been preserved. This may be due to the selective state of preservation of this building: it looks as if it was razed deliberately on a slope from north to south, i.e. from the outer line of the building towards the centre.

This operation was presumably carried out by the builders of the deep well excavated into the EB open-air reservoir, who most probably were the inhabitants of the Iron Age fortress in one of its periods. In previous reports we have discussed the arguments for this identification. We have now dug into the fill of the well, uncovering 1.5 m. of the vertically cut rock; we have not yet reached the bottom of the well. Geologically the problem has not yet been completely understood; it seems that only when the bedrock at the very bottom of the well has been cleared will the geologists be able to understand the mechanics of this well.

In the Herodian period, when a very thick-walled stronghold of substantial character existed on the mound, the well was reused and various water-installations built around it in a circle. The reuse of the Iron Age well is attested by sherds as well as by a late type of masonry found both *in situ* in the upper parts of the wall of the well and fallen throughout the fill.

A new area, Area W, was opened on the line of the city-wall on the eastern slope of the hill. One and a half squares were excavated, the results showing that the city-wall was destroyed here by a Herodian building. To the south-west and north-east of this building, the city-wall is preserved. The Herodian building, of which only the foundations remained, constitutes a new problem in the history of the site.

(Communicated by Ruth Amiran and Ornit Ilan)

Shiqmim, 1982

The second season of archaeological investigations in the Meṣad Aluf area in the northern Negev foothills took place from 1 September to 3 October 1982, under the auspices of the Department of Antiquities and Museums, the W.F. Albright Institute of Archaeological Research, Jerusalem, and the Negev Museum of Beer-sheba. The project was funded by a grant from the National Geographic Society and co-directed by D. Alon and T.E. Levy. Some travel funds were provided by the Anglo-Israel Archaeological Society (London). Participating volunteers came from the University of Sheffield, London University, Edinburgh University, University of Southampton, the Freie Universität, Berlin, the Hebrew University, Jerusalem and Ben-Gurion University, Beer-sheba. Other volunteers came from Holland, Sweden, Israel and the United States.

The project is a long-term multi-disciplinary study which focuses on investigating changes in social organization and subsistence strategies during the Chalcolithic period in the northern Negev. Present research activities concentrate on the excavation and study of the large (about 95 dunams) Chalcolithic settlement site of Shiqmim (map ref. 1147 0675) and the nearby Chalcolithic mortuary complex on the right bank of the Naḥal Beer-sheba near Meṣad Aluf. The core staff includes the following specialists: P. Goldberg, geology; Caroline Grigson, archaeozoology; Marijke van der Veen, paleobotany; B. Arensburg, physical anthropology; M. Feist, I. Watkin and S.W. de Bray, surveying; and T. Ludovise, photography. The Israel Defense Forces, Kibbutz Ḥatzerim and the Archaeological Survey of Israel were extremely helpful in providing logistic support for the expedition. Three areas were investigated in 1982: the lower village settlement (supervised by Tirzah Muttat with Christianne Paris as assistant supervisor), the upper village (supervised by Ailsa Mainman) and the mortuary complex (supervised by G. Gosden with Elizabeth Schiller as assistant supervisor).

Lower Village Exploratory Trench. To define the main stratigraphic units in the lower village, a test trench (1 × 3 m.) was dug with the aim of reaching virgin soil. The depth of the cultural deposits was more than 2 m. Twenty-three layers contained pottery and flint artifacts typical of the classic Beer-sheba Chalcolithic assemblage. The lowest layer rested on a 25 cm. layer of wadi gravels containing no cultural material and con-

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sidered as virgin soil. Underneath the gravels a thick deposit of virgin silts was found.

Preliminary interpretations indicate that the earliest settlement in the lower village began a few centimetres above the wadi gravels. However, evidence for architectural building phases appears approximately 75 cm. or six layers over the wadi gravels, at 1.57 m. below the surface. It is possible to define a total of four main building phases in the lower village.

Lower Village. The main aims of the excavation in the lower village were: (1) to expand the sample of village architecture recovered in 1979 with the intention of defining the basic Chalcolithic household unit in the Negev; (2) to define the vertical and horizontal stratigraphy in relation to the previous excavation; (3) to collect systematically a wide range of soil samples for paleobotanical identification and analysis; (4) to collect an adequate sample of faunal remains for investigating husbandry strategies; and (5) to collect soil samples from the floors of buildings for microscopic analysis of activity areas and room function. The latter subject is being studied by Arlene Rosen.

Six 5 × 5 m. squares were opened immediately south of the 1979 excavation to connect the two areas stratigraphically; after profiles were drawn of the one-metre baulks they were removed to facilitate exposure of the village plan. The surface of the lower village contains heavy concentrations of flint, pottery sherds and the collapse of walls, which made it necessary to collect the surface deposits according to a 1 × 1 m. grid. This method will facilitate the comparison of the Shiqmim village site with other Chalcolithic surface collections from the Negev.

The 1979 season revealed a large rectangular building (room 1 — 3 × 6 m.) with massive foundation walls about 90 cm. wide. The building was established during the last building phase at the site (Building Phase I), and two floors were defined. The upper floor yielded a wide range of Chalcolithic pottery and a large grinding stone. A long-lived wood sample collected from this floor yielded the following radiocarbon date from Dr. A. Kaufman, Isotope Laboratory, Weizmann Institute: Sample No. RT-554A: Half-life (5568 B.P.) = 5250 ± 150; MASCA calibrated range = 4070–4160 B.C.E.; MASCA maximum possible spread = 3900–4350 B.C.E. On the lower floor the remains of what may be a copper-working furnace were found, in association with numerous copper slags. On the same floor was found a copper 'sceptre' similar to those discovered in the Cave of the Treasure in the Judean Desert.

Four building styles can now be defined among the lower village walls: three consist of two parallel rows of wadi cobbles, but differ in their width and type of fill, while the fourth consists of single lines of wadi cobbles. Preliminary observations indicate that Phase II, the second to the last, was the most extensive constructon period at the site.

The rectangular rooms at the site are usually constructed during one building phase and contain evidence of two floors. The most common artifacts found in the rooms are pottery vessels, including V-shaped pots, basins, pithoi and some holemouth jars. Compared with the upper village, there is little flint debitage in the rooms which indicates that flint workshops were located away from the building structures. Several digging-stick weights, a large mother-of-pearl pendant, and a Nubian sandstone palette were found on the floor of one room. In general, the rooms were oriented north-west–south-east with possible doorways on the broad sides of the room, suggesting that the most common building constructed at the site was the broad-room type.

Upper Village. The upper village is situated on a series of 10 loess hills adjacent to the lower village. The hill tops are characterized by ashy-gray soil, thick deposits of flint debitage and many Chalcolithic sherds. One of these hill tops, 200 m. north-east of the lower village, was sampled by opening a 5 × 5 m. excavation area, to obtain information on the settlement processes in the upper village for comparison with the lower village. All the deposits were dry-sieved through a 3 mm. sieve.

In 1978 a small sondage (2 × 4 m.) made on this hill top produced a large number of faunal remains (primarily sheep and goat). Thick deposits of ashy soil were sampled for carbonized plant remains. Evidence of barley (*Hordeum cf. districhum*), wheat (*Triticum dicoccum*), lentils (*Lens culinaris*), wild grasses, Malva, Ajuga and small weed seeds was found.

In comparison with the lower village, the Chalcolithic cultural deposits on the hill top are

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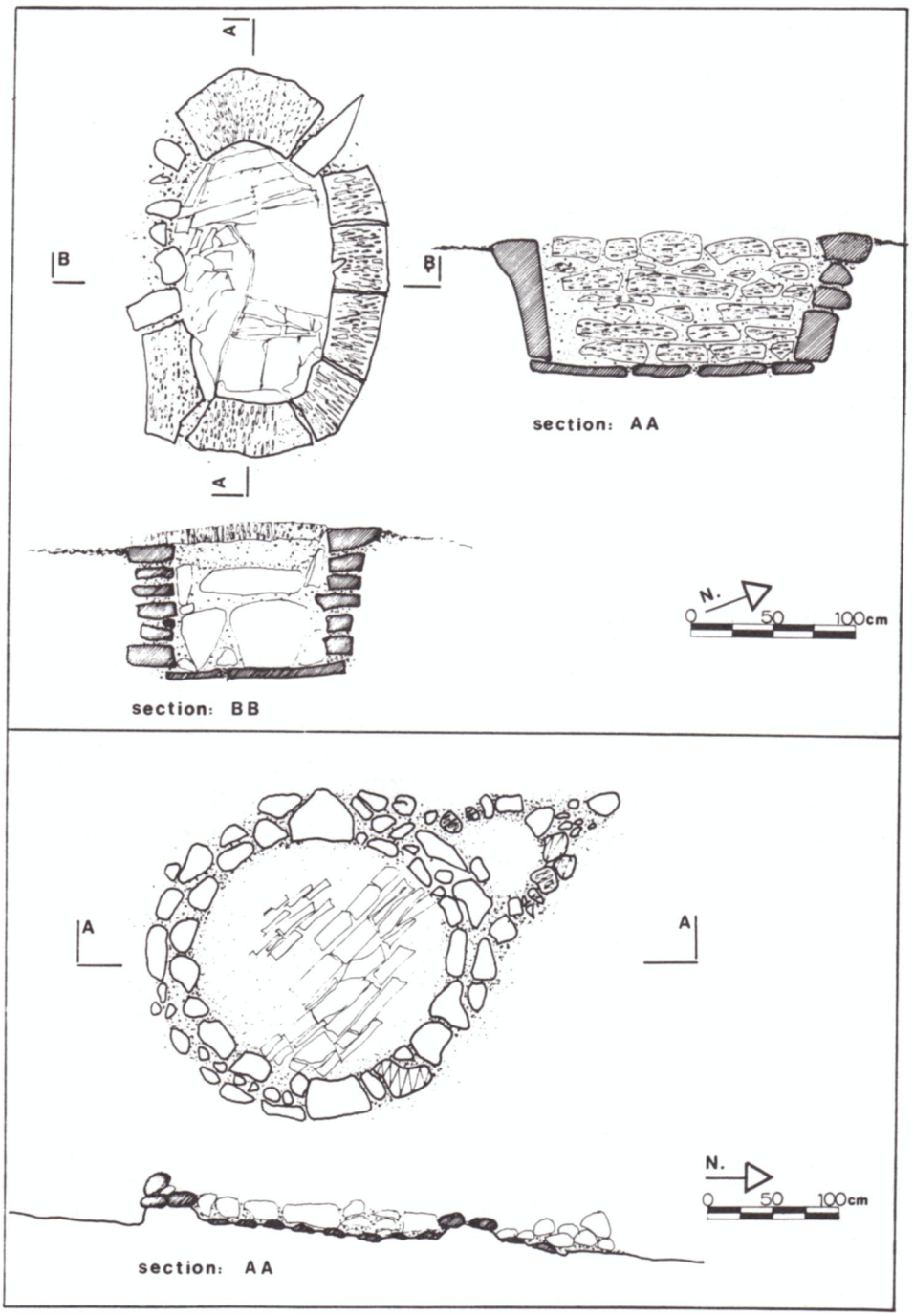

Fig. 1. Shiqmim, plan and sections of Cist 34 (above) and Grave Circle 23 (below).

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shallow. A probe (1 × 2.5 m.) was taken down to virgin soil in the north-eastern corner of the excavation square; on average the cultural deposits reached a maximum depth of 80 cm. The greatest contrast with the lower village was the lack of any walls or evidence for rooms; the majority of the loci consisted of weathered or beaten floor surfaces, ashy and burnt sediment layers, ash pits, fire pits, small stone-lined installations, plastered pits and shallow depressions. Six of these depressions were found, all dug into the virgin soil.

A number of interesting finds came to light in the upper village excavation. The most spectacular was a spherical copper mace head similar in form to those found in the Cave of the Treasure. The mace head was found 19 cm. below the surface among parallel grooves in the soil which may be plough marks. The tip of a Bedouin plough found in the same locus indicates that the mace head may come from a disturbed context. At a depth of 52 cm. but in the same vicinity, two articulated adult hands (plus a child's finger-bone), an articulated foot, a clavicle, a patella, several vertebrae and human teeth were found. Other objects such as a large oval tabular flint scraper, a bone pendant and a polished sandstone palette fragment were also found near these remains. The question of whether these items represent grave offerings associated with the burial is still under consideration.

Mortuary Excavation. In 1979 the first Negev Chalcolithic mortuary complex was found near Shiqmim. This year hill No. 3 was selected for investigation because of damage caused by grave robbers. The chalk hill is located approximately 19 m. above the Naḥal Beer-sheba, 600 m. west of the lower village excavation. As the hill top soil deposits were shallow (10–30 cm.), it was relatively easy to clear an extensive area to virgin soil. A total of 25 5 × 5 m. squares were excavated and 26 mortuary structures discovered. Each of the structures were excavated by quadrant or halves depending on their size, and all the deposits were dry sieved through a 3 mm. mesh screen. Of the 26 mortuary structures found, only eight contained human remains, and twelve were either disturbed or completely robbed.

The cemetery contained circular grave structures ranging from less than 1 m. to over 3 m. in diameter. The largest grave circle (No. 24) was excavated in an emergency excavation by the authors in 1981; it contained a large number of disarticulated human bones and two large shell (*Lambis truncata*) bracelets. These bracelets are similar in shape, design and material to those found in the *nawamis* near 'En Ḥuderah in the southern Sinai peninsula (*IEJ* 27 [1977], pp. 65–88) and also at Gilat in the northern Negev. Typical Chalcolithic V-shaped pots with painted red rim and mother-of-pearl pendants were also found in this grave.

Grave Circle 23 (Fig. 1) was also excavated in 1981; it measures 2.12 m. in diameter and contained the remains of a large clay ossuary, remarkably similar in form to those found in the Chalcolithic burial caves at Azor on the coastal plain (*'Atiqot* 3 [1961] English Series, pp. 38–39). This large object in the centre of the grave circle serves as an indication of the minimum height of the walls (70 cm.), which probably rested on the grave circle's foundation stones. Since few stones are found as wall collapse in the grave circles, it is conceivable that the circular graves possessed a mud-brick superstructure higher than 70 cm. and perhaps similar in shape to the *nawamis* of southern Sinai.

The most fascinating discovery found in this year's excavation in Cemetery 3 were ten cist 'graves' (Fig. 1), none of which contained any human remains. The cists were excavated into the loess topsoil in an area of the hill top which was prepared for their construction. The cists were all lined with either slabs of chalk blocks or large wadi cobbles. Their average depth is 72.3 cm., their average exterior length is 1.95 m. and their average exterior width is 1.34 m.

All ten of the cist structures contained one or more of the typical Chalcolithic V-shaped pots *in situ* on the floors. Cist No. 35 also contained a large oval scraper made on tabular flint. Other finds in the cists include Chalcolithic coarse ware sherds, a churn handle, flint tools and a mother-of-pearl trapezoidal pendant with herringbone design. The presence of V-shaped pots and other artefacts on the cist floors and the cists' proximity to the circular graves suggest that they are connected with the Chalcolithic burial ritual.

(Communicated by T.E. Levy and D. Alon)

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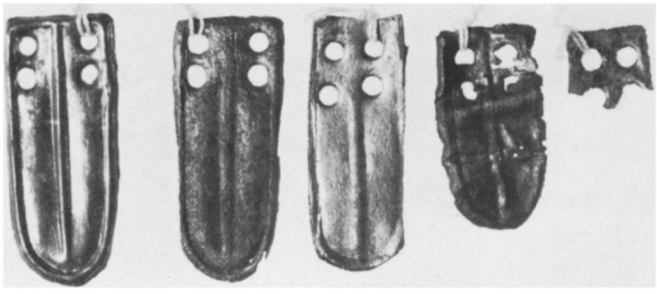
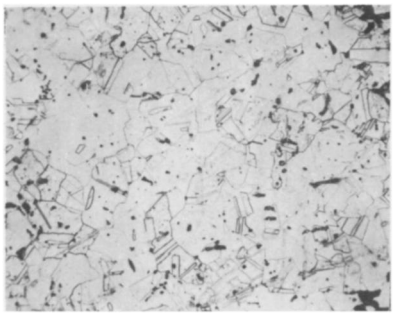
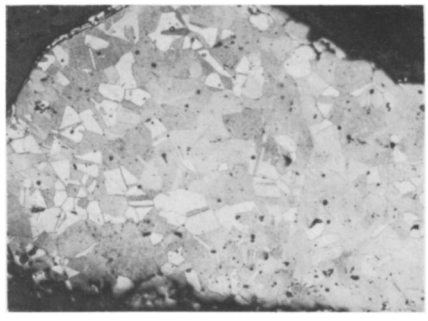
PLATE 14



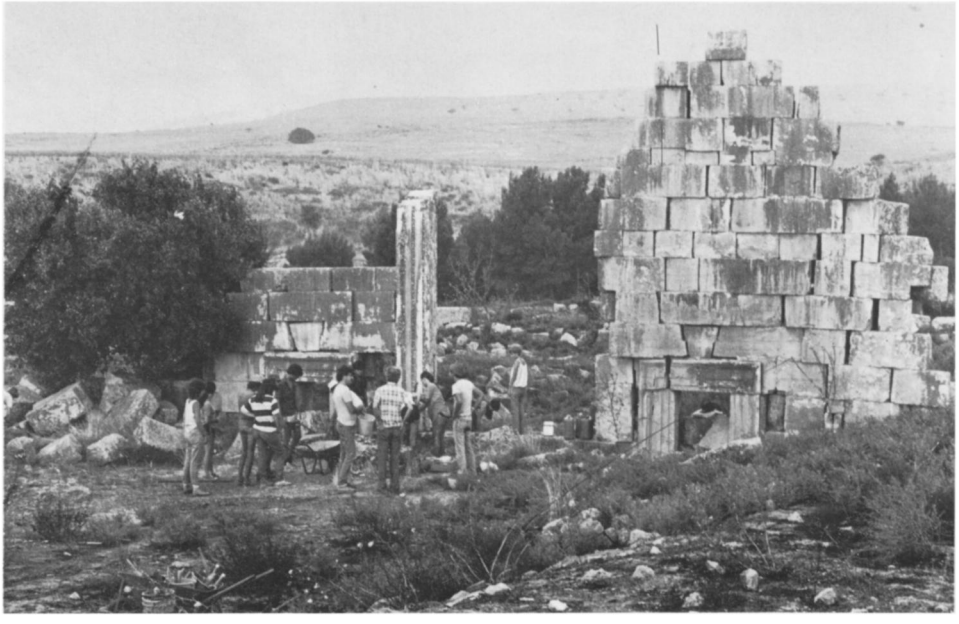
A: The armour scales: left to right, 1039–190/11, 1039–190/7, 1039–190/8, 1039–190/73, 1039–190/6.





B: Microstructure of scales; left, 1039–190/8; right, 1039–190/11, x 100.

ARMOUR SCALES FROM MASADA



C: Qedesh, eastern façade of Roman temple.

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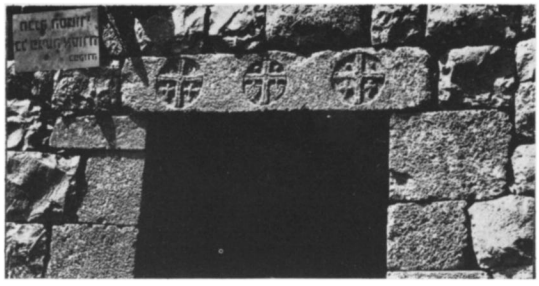
A: Er-Ramthaniyye, doorway of hall-type structure.

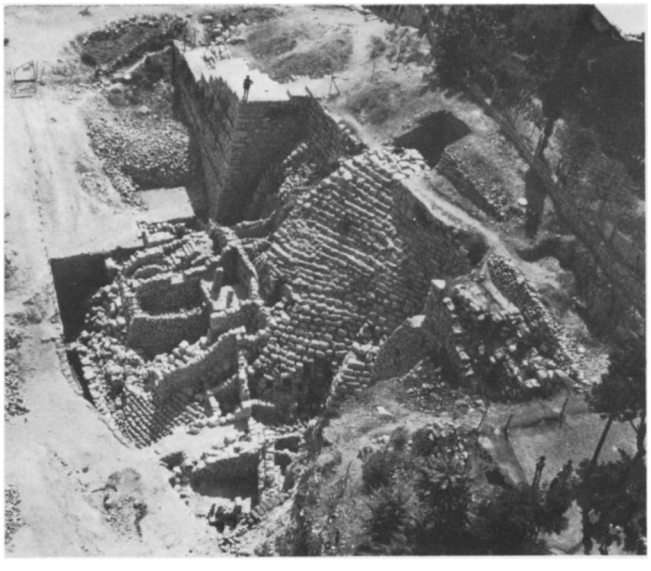


A: *Golan Survey*
B–C: *Dor*
D–E: *Jerusalem, City of David*

B: Aerial view of Hellenistic residential quarter, Area C.

C: Head of clay figurine from *favissa* of Persian period, Area C.

D: Bulla reading '(belonging) to Benayahu son of Hoshayahu', twice actual size.



E: Area G, aerial view from north.

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PLATE 16

A: Palace of eighteenth–seventeenth centuries B.C.E., looking north.

A: *Tel Aphek*
B: *Shiloh*
C: *Tel Batash*

B: Pottery vessels from Iron Age I storehouses.

C: Oil press in courtyard of house, seventh century B.C.E.

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